# MLS1547

**Cat. No.:** HY-128121

**CAS No.:** 315698-36-3

**Molecular Formula:** $C_{19}H_{19}ClN_4O$

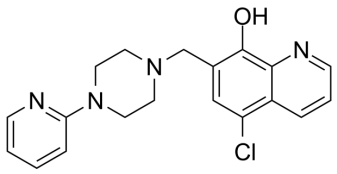
**Molecular Weight:** 354.83

**Target:** Dopamine Receptor

**Pathway:** GPCR/G Protein; Neuronal Signaling

**Storage:**

| | | |
|---|---|---|
| Powder | -20°C | 3 years |
| | 4°C | 2 years |
| In solvent | -80°C | 6 months |
| | -20°C | 1 month |




## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : 33.33 mg/mL (93.93 mM; ultrasonic and warming and heat to 60°C)

| Preparing Stock Solutions | Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|---|
| | 1 mM | 2.8183 mL | 14.0913 mL | 28.1825 mL |
| | 5 mM | 0.5637 mL | 2.8183 mL | 5.6365 mL |
| | 10 mM | 0.2818 mL | 1.4091 mL | 2.8183 mL |

Please refer to the solubility information to select the appropriate solvent.

**In Vivo**

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 1.25 mg/mL (3.52 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 1.25 mg/mL (3.52 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 1.25 mg/mL (3.52 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

MLS1547 is a highly efficacious G protein-biased dopamine D2 receptor (D2R) agonist ($K_i$=1.2 μM). MLS1547 stimulates D2R G protein-mediated signaling ($EC_{50}$=0.37 μM in a calcium mobilization assay). MLS1547 acts as an antagonist for dopamine (DA)-stimulated β-arrestin recruitment to the D2R ($IC_{50}$=9.9 μM)[1][2].

**In Vitro**

MLS1547 fully antagonizes dopamine-mediated β-arrestin recruitment to the D2R in the DiscoveRx assay, with an $IC_{50}$ of 9.9 μM. Similar results were obtained when MLS1547 was examined for antagonist activity in the D2R β-arrestin BRET assay, demonstrating an $IC_{50}$ of 3.8 μM. MLS1547 is found to completely displace [$^3$H]methylspiperone binding to the D2R, with a

| | |
|---|---|
| | calculated $K_i$ of 1.2 μM[1].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

## REFERENCES


[1]. Free RB, et al. Discovery and characterization of a G protein-biased agonist that inhibits β-arrestin recruitment to the D2 dopamine receptor. Mol Pharmacol. 2014;86(1):96-105.

[2]. Chun LS, et al. Structure-Activity Investigation of a G Protein-Biased Agonist Reveals Molecular Determinants for Biased Signaling of the D2 Dopamine Receptor. Front Synaptic Neurosci. 2018;10:2. Published 2018 Feb 21.



**Caution: Product has not been fully validated for medical applications. For research use only.**



Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA